

Remarks

Claims 1-12 remain in the application with Claim 1 in independent form. Claim 1 is currently amended. Claims 2-4 remain as originally filed, i.e., are not amended. Claims 5-12 remain as previously presented. Claims 13-16 were previously cancelled.

Claims 1-4, 6-9 and 12 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2006/0120655 to Walker. Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2006/0120655 to Walker. Claims 10 and 11 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

One skilled in the art would not consider the Walker reference when contemplating how to produce a substantially symmetrical coplanar waveguide line having a low drive voltage and a low microwave loss, as there is no teaching disclosed within the Walker reference as to how to achieve a coplanar waveguide line having a low drive voltage and a low microwave loss.

The device disclosed in the Walker reference operates as an asymmetric coplanar waveguide line. The device in the Walker reference has first and second electrode strips (40b and 42b) to which a modulation voltage and RF Ground are applied. Extending from these two strips are T-bars (40, 42) proximate to the optical waveguides. As is known with asymmetric coplanar waveguide lines, an n+ electrically conducting layer extends between the optical waveguides within the substrate. The device disclosed in the Walker reference has an extra T-bar 62 which forms a “passive” capacitor with

conductive layer 44 to produce balanced capacitive loading. As a result of the “passive” capacitor, a reduced fraction of the modulating voltage appears across one electrode strip of the modulator, while an increased fraction appears across the other electrode strip of the modulator.

The Examiner has identified element 62 of the Walker reference as disclosing a central electrode strip. However, element 62 of the Walker reference would not be viewed by one skilled in the art as a central electrode strip, as it does not operate as a central electrode strip is understood to operate within a coplanar waveguide line. Furthermore, The Examiner has identified element 44 of the Walker reference as disclosing a second electrode strip. However, element 44 of the Walker reference would not be viewed by one skilled in the art as a second electrode strip, as it does not operate as a second electrode strip is understood to operate within a coplanar waveguide line. Rather, one skilled in the art would recognize that element 44 of the Walker reference operates as an N+ electrically conducting layer within the substrate.

Claim one is currently amended to clarify that both the first electrode strip and the second electrode strip are disposed on a surface of the substrate and on opposite sides of the central electrode strip and extending parallel thereto. Support for this limitation is found in Figure 8 and on page 9, lines 7-10. Accordingly, no new matter is being introduced. Elements 44 and 40b of the Walker reference, identified by the Examiner as disclosing the first and second electrode strips, are not disposed on the same surface of the substrate as clarified by the currently amended claim 1, i.e., the elements 44 and 40b are not coplanar. Element 40b is arranged on the substrate to one side of strip 62, while

element 44 is arranged directly beneath strip 62. This arrangement disclosed within the Walker reference fundamentally alters the way the device works, resulting in an asymmetric device with balance capacitive loading as described above.

Furthermore, the Examiner has identified element 24 of the Walker reference as disclosing the N+ electrically conducting layer. However, element 24 of the Walker reference does not extend between the optical waveguides. Rather, element 44 extends between the optical waveguides. However, the Examiner has previously identified element 44 as the second electrode strip. Applicant respectfully submits that it would be improper for the Examiner to contend that element 44 of the Walker reference is both the N+ electrically conducting layer and the first electrode strip.

In contrast to the device disclosed in the Walker reference, the coplanar waveguide line of the subject application is arranged to produce a substantially symmetric coplanar waveguide behaviour with unbalanced capacitive loading. The coplanar waveguide line according the subject application further includes an electrically conductive layer in addition to the substrate, which is against the known teaching in symmetric coplanar waveguides.

Accordingly, for the reasons described above, Applicant respectfully submits that claim 1 is not anticipated by the Walker reference, and is therefore patentable. As claims 2-12 all depend either directly or indirectly from claim 1, Applicant respectfully submits that claims 2-12 are also not anticipated by the Walker reference and are therefore patentable. Additionally, for the reasons described above, Applicant respectfully submits that claim 5 is not obvious in view of the Walker reference, and is therefore patentable.

The remaining references cited but not applied to the claims have been considered. Since the Examiner has apparently considered these references as less pertinent than the above discussed reference(s), further discussion of the non-applied references, at this time, is considered unnecessary. However, it is respectfully submitted that the claims in the subject patent application patentably define over all references of record either independently or in combination.

Accordingly, it is respectfully submitted that the Application, as amended, is now presented in condition for allowance, which allowance is respectfully solicited. The Commissioner is authorized to charge our Deposit Account No. 08-2789 in the name of Howard & Howard Attorneys PC for any fees or credit the account for any overpayment.

Respectfully submitted,

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